MODIS Technical Team Meeting
Thursday, January 10, 2002
3:00 P.M
Building 33, Room E125

Vince Salomonson chaired the meeting. Present were Dorothy Hall, Bob Murphy, Skip
Reber, Bill Barnes, Eric Vermote, Ed Masuoka, Wayne Esaias, Chris Justice, and Steve
Kempler, with Rebecca Lindsey taking the minutes.

1.0 Upcoming Events

➢ Terra Data products Review   January 7-8, 2002
NASA Headquarters

2.0 Meeting Minutes

2.1 General Discussion

Salomonson said that he has been invited to give a briefing at HQ about the
recommendations of the MODIS Data Processing Review Team, on the 28th of January
from 1-2 pm. Salomonson said that he wants to meet with the discipline leads so as to do
some "homework" in preparation for whatever discussion occurs at that meeting. The
discipline-leads meeting will be scheduled next week. Justice asked if the disciplines
should still be preparing white papers on the subject, as the team had discussed
previously, and Salomonson said yes. Hall commented that she had been discussing the
MODIS products with Mike Bosilovich, who asked if all the products were available in
the 5 km CMG format. Hall mentioned the idea of the interdisciplinary data set products
all being in a similar format, and he really liked the idea. So she felt that there would
definitely be interest in the data set.

2.2 Instrument Status
Barnes reported that there will be a pre-ship review for Aqua at TRW on February 5-6,
and if that goes well, we will likely make launch late March. He also reported that there
is a new solar spectrum from Thuillier, and we are investigating whether MODIS should
switch. Barnes showed a chart (See Attachment 1) of what is currently being used and the
new spectrum. In percent, the difference between the two is bigger at longer wavelengths
(1.5-2.4 micrometers). He mentioned that SeaWiFS is considering using the new data,
and if we were not to switch, comparison to them would become difficult. Esaias added
that the issue would likely be discussed at the upcoming SIMBIOS meeting. This would
require a change to LUTS. It is up to the team to decide whether to switch. Salomonson
thought it seemed like we ought to do it, but Esaias reminded then that such a change
would necessitate modifications in Oceans code, and that might affect the timeliness of
their delivery of software to begin reprocessing. Salomonson agreed that if that is the
case, the subject deserves more thought. Barnes added that these are preliminary
numbers, and they could change.

Barnes reported that Santa Barbara Remote Sensing is recommending an extra week of outgassing on Aqua, based on our experience with having to outgas the cooler on Terra. However, there are issues with scheduling this because the timing would put us within two days of the spacecraft deep space maneuver, and that is not desirable.

Masuoka asked if there would be bands that needed adjustment after the door is opened. Barnes didn't think so; he thinks Aqua MODIS will be fully operational as soon as they open the doors. Salomonson commented that because of dead detectors, several algorithms would need to be modified, e.g., cloud detection and snow mapping.

With respect to MODIS readiness to support Aqua launch, Masuoka had been asked to provide a date on which the EDC and NSIDC DAACs would expect to begin receiving data products. If MODIS will be operational right away, then he could say that some products could arrive as early as 44 days after launch. Salomonson felt that we should provide a more conservative estimate, remembering our experience with Terra. Esaias suggested that we could say "no earlier than launch plus 90 days." Salomonson indicated he would have to continue to think about the best estimate. Justice felt that we needed to get L1B data out as quickly as possible. Murphy reminded the group that unlike with Terra, this time there will be direct broadcast and it would be bad to have direct broadcast data getting out before data came from the DAAC.

2.3 Data processing

Kempler reported that the DAAC is about 3 days behind the leading edge. Vermote asked if the three-day lag is to be the normal operating procedure or whether there was something wrong. Kempler wasn't sure. [Note added in proof: Kempler reported that nothing in particular was wrong, and that the DAAC would continue to fluctuate around the leading, keeping as close as possible, but realizing that problem with delivery, etc, occur when they are so close.] December 2001 is done minus a few missing hours, and the rest of the data look clean. Their X-rate is about 3-4 consistently, with spurts up to 5x. They have also processed a large amount of data before November 2000 as well.

Kempler presented some slides on the initial efforts at the DAAC to analyze the process of data order to data delivery—looking for all problems that can occur. The group is in the problem identification phase. Among the problems with the ordering interface are that searches may fail, searches can succeed, but the actual request for data does not get submitted, and requests can get submitted with no message back to the user saying data was ordered.

Functionally, there are problems, as well. Large order limits aren't always known to the user. Sometimes users are permitted to search and order data than that we know is not deliverable, and also in some situations, there is no way for failed order to be resubmitted by the DAAC. Finally, error message are cryptic, and troubleshooting can be difficult.

Justice asked what percentage of orders come though WHOM and what percentage through EDG. Kempler wasn't sure [Note added in proof: Kempler reported that the split was 60/40 (WHOM/EDG).]

Barnes asked Kempler if reprocessing L1B would be a problem for the DAAC. Kempler said it would proceed at the DAAC's normal x rate. Salomonson said that he had not given much thought to L1B having to be reprocessed, but Vermote said that he thinks it will have to be done

Masuoka reported that their security assessment showed only five systems with significant problems, on the discipline sides, which is good news. Also, at the Aqua interim ORR, Vanessa Griffin supported the idea of getting a person at EDC to come here for 6 months and learn about land data. Tom Kalvelege was also supportive. Robert Wolfe has provided some information on what the position entails. He also reported that the EDC got a 500 GB order for MODIS data, and they are working on filling it.

For the forward processing stream, MODAPS' leading edge is January 5, 2002. One piece of bad news is that was problems with GDAS DAO input data, beginning in mid-December, and it caused some atmospheres products to fail. Esaias said that Oceans noticed a step function in DAO PAR in mid-December. This will affect their OPP product, and he imagined it would affect Land NPP as well. Masuoka said the question is do we need to go back to December 14th and reprocess. The expected power install will be in February, but not as early as he thought, which will push back the completion of the consistent year to about January 22 or so. The only question is how much this GDAS thing will affect the schedule. There are to be meetings with DAO to discuss the issue.

With respect to reprocessing, Justice indicated that Land was willing to wait until summer to begin its reprocessing, but Masuoka's most recent schedule shows that they wouldn't be ready to begin until September 2002. Justice is not as comfortable with that. Masuoka said that the intent was to be ready before then, but that his schedule was conservative. He has asked Robert Wolfe to email the team about when code would be needed. MODAPS needs PGEs coming in staggered, not all in at April 15, which is the cut off. Masuoka wants to get a schedule for the team and track their progress against it. Justice wondered why they need code in so early if reprocessing isn't going to start until later. Masuoka said that in addition to all the testing, there is the possibility that oceans could run into problems, and if Land was ready to go, they could begin much earlier.

Salomonson asked what period Oceans wants reprocessed. Esaias said that Oceans really wants to reprocess the mission, but Ed came back with a schedule based on 12 months, not 24. Justice felt that reprocessing the mission for Oceans would take a lot longer and bog everyone else down. He said that before he made a request for reprocessing, he would like to get a feel for what the real capacity of the system is. Obviously all of the team would like to go back to the start of the mission. But we need to get a real honest sense of system capability, a conservative estimate. It concerned him that we are getting a new drop, and Aqua is coming online, and all of those things are coming in together in the face of reprocessing.

As far as how long reprocessing will take the Oceans, Esaias said that he feels Masuoka's schedule is realistic, especially with the second iteration of code changes, and the Oceans

team really hopes to be able to beat it. Justice said that it would be good to have a time cut off, and a prioritization of what periods were most important. Do those first, and then see if there is any time remaining. Esaias said he understood Justice's concern, but that Oceans is driven right now by the fact that they have no validated ocean color data in the archive. There is pre-side B data that have never been processed for Oceans. They are concerned that if they don't get to it now, they may never get to it. He agreed that he'd be willing to talk about a firm date and minimum amount of data processed, but that Oceans wouldn't want to stop until they at least had a consistent year.

Reber asked if the idea was to streamline production to emphasize the products actually being sent to the DAAC. Esaias said they were exploring all options: some things will not be processed at all, and they will make decisions about whether it is easier to change code to eliminate a product, or leave it in and let it run, and not send it to the DAAC.

3.0 Action Items

3.1 Reber to send Justice the mailing list that has members of the DAWG.
3.2 Justice to contact Bob Whacker
      Status: Open.
3.3 Ramsay to forward Justice an email from him.
      Status: Open
3.4 Discipline leads to meet to resolve the issue of beta-release code and science-quality code, and what we need to say about it.
      Status: Open.
3.5 Technical team to discuss further the issue of predicted ephemeris data and how to improve it.
      Status: Open.